

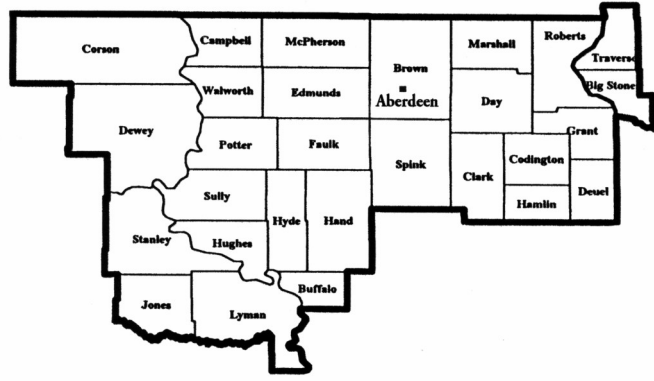
National Weather Service
824 Brown Co 14 S
Aberdeen SD 57401

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Autumn, in his leafless
bowers, is waiting for
the winter's snow.

~ John Greenleaf Whittier


We're on the Internet
www.weather.gov/aberndeen



SKY SCANNER

National Weather Service Forecast Office
Aberdeen, South Dakota

October 2006



South Dakota Winter Preparedness Week
October 23rd-27th

Minnesota Winter Weather Awareness Week
November 13th-17th

Winter is getting ready to make another appearance, so now is the time to get reacquainted with not just your parka and snow boots, but the mindset of how to keep yourself and your loved ones safe during this upcoming winter season.

The National Weather Service has set up a website where you can get an abundance of winter weather and winter safety information. Check out www.weather.gov/om/winter, and become as prepared as you can for Old Man Winter's arrival.

Items for a winter safety kit in your car

- Blankets/sleeping bags
- Flashlight with extra batteries
- First aid kit
- Knife
- High calorie, non-perishable food
- Extra clothing to keep dry
- A large empty can and plastic cover with tissues and paper towels for sanitary purposes
- A can, candles and water-proof matches to melt snow for drinking water
- Sack of sand (or cat litter)
- Shovel
- Windshield scraper and brush
- Tool kit
- Tow rope
- Booster cables
- Water container
- Compass and road map

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Snowfall Reminders

With winter finally upon us, it’s time to dust off our rain gauges, put down our snow boards, and brush up on our snow observing procedures. Since it’s been such a long time since we’ve had any significant snow, here is the opportunity to review the procedures for measuring and reporting winter precipitation.

Helpful Reminders

- 1. Remove the funnel and inner measuring tube of the rain gauge to expose the overflow can so that it can more accurately catch frozen precipitation.
- 2. If you have them, put your snow boards out and mark their location with a flag or some other indicator so they can be found after a new snowfall. They should be located in an open area (not under trees, obstructions, or on the north side of structures in the shadows).
- 3. Check your gauge to make sure there are no leaks. If there are leaks, give us a call and we’ll mail you out a new one.

What do we report

- 1. Measure and record the snowfall (snow, sleet, snow pellets) since the previous snowfall observation.
This measurement should be taken once -a -day and should reflect the total accumulation of new snow observed (in inches and tenths, for example, 3.9 inches) since the last snowfall observation.
- 2. Determine the depth of snow on the ground at the normal observation time.
This observation is taken once -a -day at the scheduled time of observation with a measuring stick. It is taken by measuring the total depth of snow on ground. Report snow depth to the nearest whole inch, rounding up when one -half inch increments are reached (example 0.4 inches gets reported as a trace (T), 3.5 inches gets reported as 4 inches).

- 3. Measure and record the water equivalent of snowfall since the previous day's observation.

Measuring Liquid Precipitation Equivalent.

- 1. Report the liquid water equivalent for any NEW snowfall to the nearest 0.01 inch.

Two methods for melting snow.

- Add warm water to the gauge in order to melt the snow. Remember to carefully measure the added warm water so you can subtract that figure from your final measurement

- Another method is to place the rain gauge in a bucket of warm water. Remember to dry the outside of the gauge off so none of the water from the bucket runs down the sides and into your measuring tube.

- 2. If too little snow has fallen to effectively measure, report as a trace.

Reporting New Snowfall.

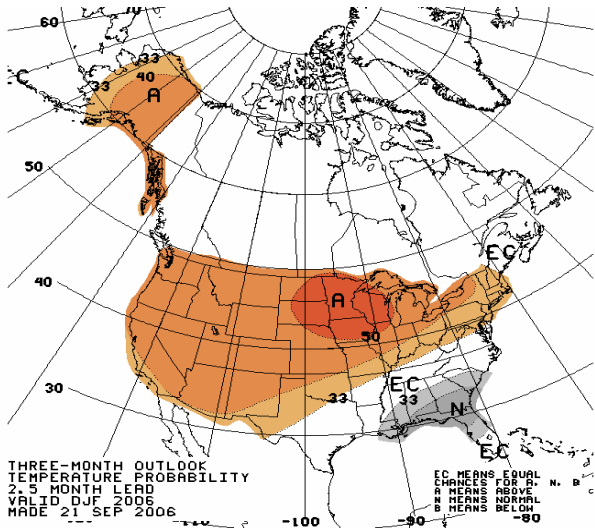
- 1. Take an average of ten measurements in an open area. Try to avoid any drifts or bare spots.
- 2. Report to the nearest 0.1 of an inch.

Reporting Total Snow Depth.

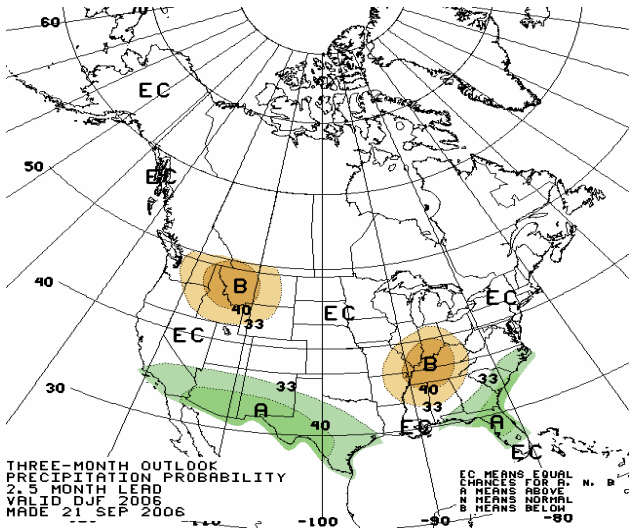
- 1. Report snow depth whenever snow covers more the 50% of the ground.
- 2. Report to the nearest whole inch, if less than ½ inch, report as a trace.

Note: measuring total snow depth can be tricky...as you know, snow may melt quickly from south facing areas, but linger for days in shaded or north facing areas. My only advice is to use good judgment in averaging the snow depth around your area.

Before ending, let the National Weather Service in Aberdeen also take this opportunity to say thanks! With the assistance of our COOP and precipitation spotters we hope to have a successful winter season keeping the public informed and ready.



3 month precipitation outlook (December-February)



3 month temperature outlook (December-February)

Holm Award Winners



Dale and Donna Meyer
Pollack, SD

From L to R: NWS Hydrometeorological Technician Glenn Nielsen, Donna Meyer, Dale Meyer, NWS Meteorologist in Charge Jim Scarlett

Marvin Seyer
Ipswich, SD



From L to R: NWS Meteorologist in Charge Jim Scarlett, Senator Tim Johnson’s representative Sharon Stroschein, Judy Seyer, Marvin Seyer, NWS Hydrometeorological Technician Ken Gillespie

El Nino

by Dan Mohr

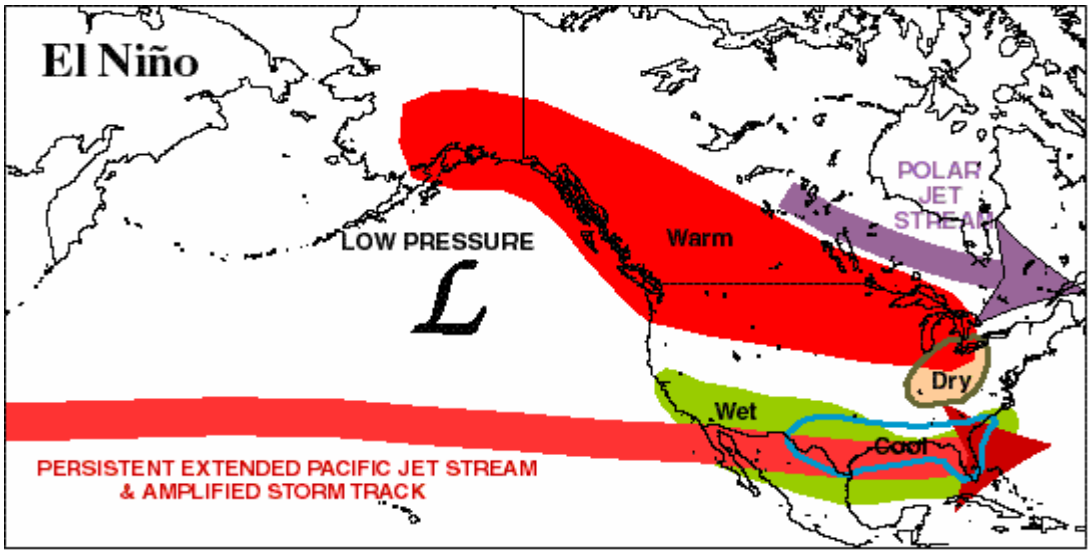
El Nino has returned to the central and east-central equatorial Pacific ocean and is likely to continue into early 2007. Currently weak El Nino conditions exist, but there is the potential for it to strengthen into a moderate El Nino by winter. The development of the weak El Nino helps explain why the Atlantic Hurricane season has been less active than was previously expected.

El Nino affects the jet stream flow across North America and subsequent weather conditions that result. It is important to note the strength of the El Nino is vital in how the weather is influenced across North America. For example, a strong El Nino becomes very dominant in forcing a certain jet stream flow over North America and the subsequent weather experienced across South Dakota. El Nino effects are likely to develop over North America during this upcoming winter season. Those include warmer-than-average temperatures over western and central Canada, and over the western and central United States. Wetter-than-average conditions are likely over portions of the U.S. Gulf Coast and Florida, while drier-than-average conditions can be expected over the Ohio Valley and the Pacific Northwest.

El Nino refers to the large-scale ocean-atmosphere climate phenomenon linked to a periodic warming in sea surface temperatures across the central and east-central equatorial Pacific. El Nino represents the warm phase of the El Nino/Southern Oscillation, or ENSO, cycle, and is sometimes referred to as the Pacific Warm Episode. The counterpart to El Nino is La Nina which is the cool episode of the ENSO cycle.

The graphic below shows the typical effects of El Nino across North America for temperature and precipitation. Remember these are the **typical** effects and no two El Nino's are exactly alike. There are several other climatic factors working with or against El Nino's influence to bring about our weather. Historically, there have been several of the mainly weak and moderate El Nino's occurring while the winter in South Dakota was colder and snowier than normal. The Climate Prediction Center's (CPC) forecast for this winter (December-February) is for an enhanced probability of above normal temperatures across much of the United States. El Nino's typically don't show a strong signal for precipitation across the northern plains for winter and thus the forecast for December, January, and February is for equal chances of below, normal, and above normal precipitation. Equal chances means that with the El Nino conditions, along with all of the other forecast tools used by the Climate Prediction Center, insufficient skill was shown to make a precipitation forecast for our area. El Nino is a large part of the long term forecast process at the Climate Prediction Center, but there are many other climate factors and computer models that are used to bring about the seasonal outlooks.

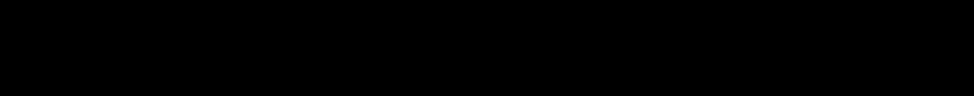
The upcoming winter of 2006-07 will be 10 years since the incredible cold, snow and wind of the winter of 1996-97 and most winters since then have been drier and warmer than normal. Will this El Nino be a strong factor in bringing another drier and warmer than normal season or will we return to more typical South Dakota winter?



Snowfall Information

by Scott Doering

Aberdeen



Pierre



Mobridge




Watertown



Sisseton





1-605-225-0519

When significant or unusual weather events occur, give us a call! We're always happy to hear from the public, especially if you're calling to report hail, strong winds, or tornadoes. Don't wait until the next day...call us when it's happening.

Ten Year Anniversary of the Winter of 1996-97

by Dan Mohr

The upcoming winter of 2006-2007 will mark the ten year anniversary of the extreme winter of 1996-97. The winter of 1996-97 had all the factors of a bad winter, with heavy snow, icing, extreme cold, strong winds, low visibilities, along with very large snowdrifts. The winter of 1996-97 actually began in late October when a strong low pressure area came up from the southwest and brought heavy snow to north central South Dakota west of the river, and severe weather to northeast South Dakota and west central Minnesota. On October 26th, 1996, up to 6 inches of heavy snow fell in Corson County with winds gusting up to 50 mph. Snow and ice accumulations, along with the strong winds resulted in the downing of over 100 power poles, leaving several hundred people without power. While the snow was falling west river, severe weather with large hail and damaging winds, along with a few tornados, was occurring in northeast South Dakota and west central Minnesota. From November 1996 on through April 1997, winter storm after winter storm affected central, north central, and northeast South Dakota, as well as west central Minnesota, bringing record snowfall and cold, blizzard conditions, massive snowdrifts, along with several rounds of icing from freezing rain. By late March into April, rapid snowmelt resulted in record flooding on all the rivers across the area, along with record high water levels on area lakes. Listed below are the most significant events of the winter, remembering that between these events, light snow, blowing and drifting snow was often a problem along with very cold conditions. Also shown are the total snowfall amounts for many locations across the area for the winter of 1996-97 and some of the devastating affects.

Significant events of the winter of 1996-97

| | |
|---|---|
| November 16 th | Winter storm with heavy snow of 6 to 9 inches |
| November 16 th -17th | Winter storm with widespread freezing rain, 4 to 10 inches of snow, near blizzard conditions |
| November 19 th -20 th | Winter storm with widespread freezing rain, 3 to 12 inches of snow, near blizzard conditions |
| November 22 nd -23 rd | Winter storm with heavy snow of 6 to 8 inches |
| November 29 th -30 th | Winter storm with widespread freezing rain and 2 to 4 inches of snow |
| December 14 th | Winter storm with heavy snow of 6 to 20 inches and near blizzard conditions |
| December 16 th -19 th | Blizzard with gusts to 55 mph and extreme wind chills |
| December 23 rd | Blizzard with 2 to 5 inches of snow |
| January 3 rd -5 th | Blizzard with gusts to 60 mph, widespread freezing rain, 6 to 26 inches of snow, and extreme wind chills |
| January 9 th -10 th | Blizzard with gusts to 60 mph, 2 to 7 inches of snow, extreme wind chills |
| January 22 nd | Blizzard with extreme wind chills |
| February 3 rd -4 th | Winter storm with 4 to 7 inches of snow and blowing snow and low visibilities |
| Late February | Flooding began on the Bad River in central South Dakota. |
| March 3 rd -4 th | Winter storm with 4 to 7 inches of snow and blowing snow with low visibilities |
| March 12 th -14 th | Winter storm with freezing rain and 3 to 8 inches of snow |
| Late March-April | Record flooding for all rivers and record high lake levels across the area |
| April 4 th -6 th | Ice storm/Blizzard, 1 to 3 inches of ice from freezing rain, 4 to 12 inches of snow with winds gusting to 70 mph. |
| May | Flooding on several rivers continued throughout May. |

Total Snowfall Amounts for the Winter of 1996-97.



Some of the affects from the devastating winter of 1996-97

- Widespread power outages from thousands of power lines and poles downed
- Numerous county and township roads, highways, and interstates closed
- Thousands of stranded travelers
- Hundreds of accidents, ditched vehicles, and rescues
- Tens of days of school closings across the area
- Tens of thousands of livestock died
- Hundreds of outbuilding collapses from the weight of snow and ice
- Hundreds of businesses and airports closed throughout the winter along with events cancelled or postponed.
- Hundreds of homes, outbuildings, and roads flooded



Near Mobridge...January 1997



Faulk County...February, 1997